REMARKS

Applicants and Applicants' attorney express appreciation to the Examiner for the courtesies extended during the recent interview held on June 7, 2005. Reconsideration and allowance for the above-identified application are now respectfully requested. Claims 1-17 and 19-33 are pending, wherein claims 1, 11, 16, 19-21, 30 and 31 have been amended, claim 18 was cancelled, and new claim 33 added.

As discussed during the Examiner Interview, the claimed embodiments provide a better test of the presence of water within a root canal compared to the root canal testing implement of Rubin (US 6,482,009). Rubin discloses an implement that includes a tip treated with a pH indicator such as phenolphthalein, litmus, phenol red, bromothymol blue, methyl red, bromocresol green, methyl orange, and thymol blue. Col. 4, lines 41-51. Color changing pH indicators of the type disclosed in Rubin typically only change color within a specific range or subset of the pH scale. When a given pH indicator is exposed to moisture having a pH outside the applicable range of than pH indicator, little or no color change will occur.

The endodontic device of claim 1 improves upon Rubin because it ensures a distinct color change when exposed to water regardless of the pH of water within a root canal. The device of claim 1 achieves this improvement by utilizing a cobalt salt that is "pH insensitive" (*i.e.*, it "changes color when moistened with water regardless of the pH of the water"). That is not true of pH indicators in general. Thus, the endodontic device of claim 1 solves a problem inherent in the Rubin device (*i.e.*, the inability to significantly change color if exposed to a pH outside the pH-indicating range of a particular pH indicator).

Moreover, Applicants submit that one of skill in the art would not have been motivated to modify Rubin in order to include a cobalt salt, as is taught in connection with entirely unrelated (and arguably nonanalogous) devices in Eakin (US 6,559,351) and Scaringe (US 6,576,473). As discussed above, Rubin discloses a wide range of different pH sensitive indicators that may be used to make the disclosed root canal testing implement. Rubin, however, neither teaches nor suggests the desirability of using any other type of color changing material. By disclosing a relatively large number of different pH sensitive indicators, but not suggesting any other type of color-changing material, Rubin reinforced the importance of using a pH sensitive indicator in his invention. Thus, Rubin, by itself, does not provide any motivation for including a color changing material such as a cobalt salt that does not change color as a result of pH.

Moreover, Applicants submit that it would be contrary to the teachings of Rubin to utilize a color-changing material such as a cobalt salt that is able to change color regardless of pH. The pH sensitive indicators disclosed in Rubin not only detect the presence of moisture but provide the additional feature of detecting the presence of disease or infection. According to Rubin, "if the pH indicator shows either a positive or negative pH, this will provide very basic information to the dentist or other practitioner as to possible types of bacterial growth which may be present." Col. 3, lines 14-17. According to Rubin, "[t]he present [invention] thereby provides both a method for detecting the presence of moisture and for aiding in detecting the presence of an infection or other tooth condition which requires treatment." Col. 3, lines 22-25 (emphasis added). Indeed, one of the stated objects of the "invention" in Rubin is "to provide a method for aiding in determining the presence of any infected body fluid in a root canal". Col. 2, lines 27-29 (emphasis added). Substituting or augmenting the pH indicators of Rubin with a material such as a cobalt salt that changes color regardless of pH would undermine or destroy one of the critical features of the Rubin invention—the ability to detect the presence of infection in a root canal. According to MPEP § 2143.01, it is never obvious to modify a reference in a manner that renders the disclosed device unsatisfactory for its intended purpose. Applicants therefore submit that one of skill in the art would not have been motivated to use a cobalt salt which is able to change color when exposed to moisture at any pH, as recited in claim 1, since doing so would render the Rubin device unsatisfactory for its intended purpose of detecting infection (in addition to detecting moisture). For this reason, Applicants submit that claim 1 is unobvious over Rubin, either alone or in combination with any other art of record.

Originally filed claim 8 alternatively recites an endodontic device that includes a cobalt salt "that changes to a first color when moistened with water and a second color when moistened with aqueous sodium hypochlorite". In rejecting claim 5, which recited similar subject matter when originally filed, the Office Action merely identified the known fact that some pH indicators (such as those disclosed in Rubin) are able to change to different colors when exposed to water having different (*i.e.*, neutral or basic) pH values. However, neither Rubin nor Eakins teaches how to select a ***cobalt salt***, from among the many possibilities, that is able to change to a first color when exposed to water and a second color when exposed to aqueous sodium hypochlorite. Nor does Scaringe teach any such thing. More fundamentally, none of the art of record suggests the desirability of utilizing a cobalt salt that is able to change to a different color when exposed

to aqueous sodium hypochlorite instead of water. As a result, one of skill in the art would not have been motivated to modify Rubin to include a cobalt salt of the type recited in claim 8. Applicants therefore submit that claim 8 as originally filed is unobvious over Rubin, either alone or in combination with any other art of record.

Claim 11 as originally filed claimed an alternative embodiment of an endodontic device that includes, in addition to an endodontic cone, both "a pH changing material" and "a pH sensitive color changing indicator". As discussed above, Rubin discloses a device that includes a pH sensitive indicator. However, Rubin neither teaches nor suggests a device that also includes a "pH changing material". Non-limiting examples of pH changing materials are set forth in paragraphs [0025] and [0026] of the present application. These include basic materials, such as CaO, KOH or K_2CO_3, and acidic materials, such as citric acid. The purpose of the pH changing material is to change the pH of water contacting the claimed device in order to cause the pH sensitive color changing indicator to change color regardless of the actual pH within the root canal. *See* paragraphs [0025] and [0026]. The practical result of including a "pH changing material" is that it allows for the use of pH indicators that would otherwise not change color, or only slightly, if exposed to water outside the pH range of a particular indicator used in the device. In other words, the pH changing material ensures a color change regardless of the actual pH of the moisture within a root canal. This is a clear improvement over the Rubin device, which only appreciably change colors if the actual pH of the moisture in a root canal is within the specified range of the particular pH indicator used in the device.

In order to further emphasize the inherent advantages of the device recited in claim 11 as originally filed, claim 11 was further amended to recite that "the pH changing material enhances a change in color of the endodontic device when the endodontic cone is moistened with water compared to a change in color of an endodontic device without the pH changing material".[1] In view of the foregoing, Applicants submit that claim 11 is novel and unobvious over Rubin, either alone or in combination with any other art of record.

Claim 16 was amended to incorporate the subject matter of dependent claim 18, which was deemed to be patentable by the Examiner at page 5 of the Office Action. Original independent claim 25 was also deemed to be patentable over the art of record.

[1] Because this feature is inherent in claim 11 as originally filed, and because Applicants believe claim 11 was allowable as filed, the amendment to claim 11 does not narrow its scope for a reason related to patentability.

Claim 31 was also deemed to define patentable subject matter. Claim 31 defines a method in which the device changes different colors when exposed to water or aqueous sodium hypochlorite. The fact that claim 31 was deemed to define patentable subject matter underscores Applicants' position that originally filed independent claim 8 is unobvious over Rubin, since it provides a device that is able to function according to the method of claim 31. Because of this, Applicants have amended method claim 30 in order to recite the use of the device of claim 8 rather than claim 1. Claim 30 is therefore patentable for essentially the same reason as to why claim 31 was deemed to define patentable subject matter.

Original method claim 32 recites the use of the device of claim 11 and is patentable for at least the reasons given above with respect to claim 11. It is axiomatic that the method of using a patentable device is itself patentable.

Finally, new claim 33 is simply dependent claim 17 rewritten in independent form. The Office Action indicates that original claim 17 defines patentable subject matter.

In view of the foregoing, Applicants submit that the claims as amended are in allowable form. In the event that the Examiner finds any remaining impediment to a prompt allowance of this application which may be clarified through a telephone interview or that may be overcome by examiner amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 13th day of June 2005.

Respectfully submitted,

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